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APLN

80 YEARS SINCE NUCLEAR USE
Looking to the Past to See the Future

AUGUST 2025

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Front page: A view of the Genbaku Dome in Hiroshima (photo by Tanvi Kulkarni)

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Table of Contents

Acknowledgements

The Asia-Pacific Leadership Network (APLN) commemorated 80 years since the atomic bombings of the Japanese cities of Hiroshima and Nagasaki with a series of short interpretive essays. We commissioned eight authors, including senior experts and next-generation scholars to contribute thoughts and analyses looking at past lessons and future pathways for a world without nuclear weapons. The essays in this volume were published as individual commentaries in August 2025.

The essays engage with the historical memory of the atomic bombings of Hiroshima and Nagasaki and identify the critical nuclear questions that the world will confront in the coming decades. Some of the essays look back at the challenging experiences faced by the authors when dealing with nuclear-related crises during their career. Each essay discusses practical steps for taking the agenda global nuclear disarmament ahead in the future. We hope that the insights offered in these essays will serve as a resource for policymakers, scholars, and the wider public committed to building a safer, nuclear-free world.

APLN is grateful to the authors for contributing their thoughts and analyses for this commemorative series.

Tanvi Kulkarni, Fang Liu & Manpreet Sethi
Series Editors

80 YEARS SINCE NUCLEAR USE

Looking to the Past to See the Future

August 2025

Asia-Pacific Leadership Network

Chapter 1

80 YEARS SINCE NUCLEAR USE – LOOKING TO THE PAST TO SEE THE FUTURE

Gareth Evans

It cannot be said too often that it is only sheer dumb luck that has enabled the world to avoid for 80 years a repeat of the indescribable horrors of Hiroshima and Nagasaki. Not because nuclear deterrence is a recipe for peace, not because systems are failsafe, not because of wise statesmanship. Just because of our incredibly good fortune in having enough operational-level cool heads in the right place and at the right time to hit the pause, not the launch, button on every one of those multiple occasions over the decades when human error or system error generated false alarms.

The deliberate first use of nuclear weapons cannot be ruled out, despite all the well-known risks involved. It simply cannot be assumed that calm, considered rationality will always prevail in the enormous stress of a real-time crisis. While the Dr Strangelove scenario – a complete madman's finger on the trigger – probably remains more fictional than real, what cannot be ignored is the possibility of an impetuous, ill-informed and unconstrained leader ordering a 'minimal' strike, maybe in misconceived pursuit of an 'escalate to de-escalate' strategy, with all the chance of the situation spiralling out of control that would entail.

That said, the bigger risk remains stumbling into a catastrophe through accident, human error, system error, or sabotage. Mishaps of the kind which occurred, to take just a few Cold War examples, when alarms of incoming missile barrages were triggered in the United States in 1979 by a military exercise tape being mistakenly fed into the live warning system, and twice in 1980 by the failure of a single computer chip, and in the Soviet Union in 1983 by the misreading of sunlight on high-altitude clouds.

And the mishaps and potential miscommunications continue. In the sub-continent, for example, when in 2022 an Indian launch-crew error sent a missile crashing into Pakistani territory with no hotline explanation following, and as recently as May 2025 when, following a terrorist attack, Indian drones went close to triggering a nuclear crisis by attacking a site very close to a key hub in Pakistan's nuclear command and control system. On all these occasions, and many others recently comprehensively documented by the Federation of American Scientists, Armageddon has been avoided. But how can anyone rationally assume that the world's good luck will be avoided indefinitely?

After a post-Cold War period in which it was possible to dream that the elimination of the most indiscriminately inhumane weapons ever devised might ultimately be achievable, the world is now again awash with nuclear weapons, and states with the capability to build and use them. And perhaps the will, as the longstanding taboo

against the aggressive first use of nuclear weapons appears to be weakening – with Russia's President Vladimir Putin in particular talking up this prospect in the Ukraine war in language not heard since the height of the Cold War.

The nine nuclear-armed states possess between them over 12,200 nuclear warheads, with a combined destructive capacity of more than 145,000 Hiroshima bombs. Some 9,000 of these are militarily active or deployed. Alarmingly, some 2,000 US and Russian weapons remain on high alert, ready to be launched within a decision window for each president of four to eight minutes. Every nuclear armed state is now modernising or increasing its arsenal, and all the most relevant arms control treaties are dead, dying or on life support.

The Nuclear Ban Treaty (TPNW) has captured the imagination of every state except those that matter most: the nuclear armed states, and those of their allies and partners who believe themselves sheltering under their umbrella. And the Nuclear Non-Proliferation Treaty (NPT) is in as fragile a condition as it has ever been, with fears of breakout increasing in Northeast Asia and Europe due to the loss of confidence in Trump's America, and in the Middle East, given the prospect of Iran responding to the humiliation of the assaults by Israel and the United States by finally building a bomb of its own.

In this desolate environment, what can be done by those of us in government or civil society around the world to advance the cause of global zero, or at least nuclear risk reduction? There are no short or easy answers, but to me the enterprise has always had two dimensions – rational and emotional.

The rational arguments for non-reliance on nuclear weapons, either to deter war or in actual warfighting, are strong and persuasive, and must continue to be made by the Asia Pacific Leadership Network and every other civil society organisation that cares, and every half-way decent government that understands the stakes. I have been proud to be associated with two big international commissions in which they have been made at length. The *Canberra Commission on the Elimination of Nuclear Weapons*, established with a stellar cast in 1996 by the Keating Government in Australia, stated the case with a succinctness much quoted and rarely bettered since: 'So long as any state retains nuclear weapons, others will want them. So long as any nuclear weapons remain anywhere, they are bound one day to be used – if not by design, then by human error, system error, miscalculation or misjudgement. And any such use will be catastrophic for life on this planet as we know it.'

The Australia-Japan sponsored *International Commission on Nuclear Non-Proliferation and Disarmament* (ICNND, which I co-chaired in 2010 with former Japanese Foreign Minister Yoriko Kawaguchi), systematically addressed and countered all the familiar arguments made for the utility of nuclear deterrence, in the context not only of rivalry between great and major powers, but also that of smaller states feeling themselves

vulnerable to attack without some super-weapon of their own. And it set out a credible multi-stage strategy for getting ultimately to elimination through a step-by-step process of nuclear risk reduction, one of the most crucial elements in which would be a universal doctrinal commitment to No First Use.

But the reality is that while rational arguments are a necessary condition for moving towards a nuclear-weapons free world, they are unlikely to be sufficient. The biggest hurdles to effective nuclear arms control will always be psychological, emotional and political. Nuclear weapons, for all the immense risks associated with their possession, seem to be an irresistible source of comfort to governments and publics feeling a sense of vulnerability. And for most, if not all, of the present nuclear armed states, the testosterone factor – considerations of status, prestige, and nuclear bragging rights – continue to be in play.

Somehow, we need to capture, or recapture, among policymakers and publics, a sense of total revulsion at the indefensible horror associated with any use, deliberate or inadvertent, of these weapons: the emotion I certainly experienced, with a force that has stayed with me for six decades, when I first visited the Hiroshima bomb site in 1964. Grass roots movements are struggling for traction. The Global Zero-sponsored film *Countdown to Zero*, produced by the team responsible for Al Gore's *An Inconvenient Truth* and hoping for the same global impact, disappeared almost without trace. And the *Oppenheimer* movie, which many of us had hoped would be a circuit breaker, showed us the Hiroshima bang, but none of the gruesome reality of the scores of thousands of men, women and children, who were vaporised, crushed, baked, boiled or irradiated to death by its impact. Sometimes I fear that the world will be shocked into action only if, God help us, a nuclear catastrophe actually occurs.

Every political leader who visits the Hiroshima Peace Park Museum seems to come away with the same traumatised sense of urgency that I experienced as a young student 60 years ago. I have long been part of a group led by the Prefecture Governor Hidehiko Yuzaki, whose aims include encouraging many more global political leaders to have that experience. As he was recently quoted in an Atlantic magazine interview, 'humanity is now risking something even more terrible than what happened here. Hiroshima is not the past. It's the present.'

Chapter 2

DISARMAMENT IN RETREAT: CAN THE NPT SURVIVE A PROLONGED DISARMAMENT DROUGHT?

Hewa Matara Gamage Siripala Palihakkara

The endurance of the global nuclear non-proliferation regime hinges on a foundational bargain: nuclear-weapon states (NWS) commit to disarmament, and non-nuclear-weapon states (NNWS) refrain from acquiring such weapons. But this compact, enshrined in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) since 1968, is now under severe strain, hopefully not terminal. Trust is wearing thin among many states, especially across Latin America, Asia and Africa, as nuclear powers modernise their arsenals while totally ignoring their disarmament obligations. At the heart of this incredulity lies an unsustainable oxymoron: Nuclear weapon states impudently insist on non-nuclear parties of NPT strictly complying with their side of the bargain, while reserving for themselves the practice of non-compliance by expanding and modernising their nuclear arsenals in clear contravention of the spirit, if not the letter, of the disarmament provisions of the Treaty.

The disarmament drought

Article VI of the NPT and the bargain struck at the 1995 Conference to permanently extend the Treaty obligate NWS to pursue disarmament 'in good faith.' But decades of inaction have rendered that promise hollow. As nuclear powers continue to proliferate vertically, the NNWS are left exposed, questioning the utility of their restraint under an inherently unequal system. The 2017 Treaty on the Prohibition of Nuclear Weapons (TPNW), backed by over 120 countries, was a direct response to this disillusionment. Although dismissed by nuclear powers, the TPNW reflected a principled world-wide rejection of a system that indefinitely defers disarmament. My own personal experience as a delegate to decades of multilateral negotiations is a living testimony to this impasse. The Conference on Disarmament (CD) in Geneva, ostensibly the sole multilateral forum for such talks, has failed to negotiate even a single word on nuclear disarmament in decades – blocked repeatedly by nuclear states abusing the consensus rule as a veto mechanism.

Compact being unravelled?

The continued refusal of NWS to address disarmament doesn't just undermine diplomacy – it emboldens arms races and nuclear brinkmanship. Nuclear tensions in global flashpoints – the Korean Peninsula, the Middle East, South Asia, and even Europe – are intensifying. Yet, nuclear-armed states show no real interest in even initiating 'talks on talks' on arms control, let alone disarmament. At the 2022 Review

Conference, the norm-setters of the NPT – the NNWS condemned this brazen neglect, and the conference ended in failure. The conundrum is expected to deepen and widen further after the United States (an NPT depository state), in alliance with Israel (an NPT-evading state with a covert nuclear arsenal), bombed Iran (a hitherto treaty-compliant state) – which continues to remain under IAEA oversight and is still willing to subject its sovereign right to develop nuclear capability to an internationally negotiated arrangement. This reckless militarisation of a diplomatic task could persuade Iran that the actual acquisition of the bomb rather than a negotiated framework, is the only credible deterrent against such foreign aggression. The last arms control treaty between the United States and Russia – New START – expires in 2026 with no successor in sight. For the first time in decades, the world's two largest nuclear powers may soon be operating without any mutual restraints. Nuclear threats are no longer hypothetical. They have been invoked directly or indirectly. Once taboo, nuclear rhetoric is now embedded in conflict narratives. The implicit message to other nations is that nuclear weapons confer protection. That is a chilling precedent.

All is not lost though?

Nuclear disarmament is unlikely to happen amid deepening geopolitical shifts and rivalries in a fluid multipolar world. But meaningful steps are still achievable to sustain what is now an increasingly tenuous non-proliferation and arms control bargain. A constructive binary is needed: reinforce non-proliferation through diplomatic, not military means, while initiating gradual but visible disarmament efforts.

Key actions include:

- Ratifying the Comprehensive Test Ban Treaty (CTBT) by holdout states;
- Negotiating a Fissile Material Treaty (FMT) to regulate weapon-usable material;
- Reducing alert levels and resisting the potential automation of nuclear command through AI in order to prevent accidents and miscalculations;
- Establishing nuclear risk-reduction dialogues and confidence-building measures, including a deep review of the nexus between the doctrine of nuclear deterrence and proliferation.

These are pragmatic trust-building measures. They are technically feasible, institutionally supported by existing verification regimes, and would demonstrate genuine intent while helping to restore credibility to a treaty regime under siege. The NPT was never simply about halting the spread of nuclear weapons – it was a geopolitical contract based on mutual obligations. Though imperfect, this arrangement helped prevent widespread proliferation for over half a century. Crucially, nuclear-armed states must stop acting as if Article VI of NPT did not exist. Initiating disarmament 'talks' does not equate to full disarmament overnight – but refusing to even begin is indefensible. The next NPT Review Conference in 2026 can be an inflection point. A repeat of the 2022 failure would severely damage the treaty regime,

triggering new proliferation waves, nuclear hedging, and increasing the risks of conflict miscalculation. Efforts towards disarmament are not a moral favour. They are a binding legal obligation and the foundation of a longstanding global consensus against the world's most destructive weapons. Failure to honour that commitment risks the collapse of the very system that has, however imperfectly, held the nuclear line for over fifty years. Without real movement on that front, the world may soon find that non-proliferation can no longer survive the ongoing disarmament drought.

Chapter 3

80 YEARS AFTER HIROSHIMA AND NAGASAKI: A THREATENING DECLINE OF THE NUCLEAR TABOO

Jiang Tianjiao

80 years after the atomic bombings of Hiroshima and Nagasaki, the nuclear taboo has experienced a serious decline. Risks of nuclear proliferation and nuclear conflict continue to rise, the international nuclear arms control architecture has almost collapsed, and the momentum for nuclear disarmament has practically reversed.

Three developments have severely weakened the nuclear taboo

First, intensifying strategic rivalries are exacerbating security dilemmas. The geopolitical tensions following the Ukraine crisis have significantly damaged the international arms control architecture. The rivalry between the United States and Russia rivalry has spurred a new arms race, characterized by a series of escalatory actions and reactions. Other nuclear armed states, including China, India and Pakistan are also modernizing their nuclear arsenals to ensure reliable nuclear retaliation.

Second, the entanglement of emerging disruptive technologies with nuclear weapons systems is heightening uncertainties and risks. Countries are actively developing conventional precision strike capabilities, space and missile defence systems, cyber and artificial intelligence technologies. Emerging disruptive technologies are like a double-edged sword, with the potential to disrupt strategic stability and lead to unexpected conflict escalation. The international community has not established effective mechanisms or international norms to regulate the deployment and use of these technologies.

Third, the risk of actual nuclear war has sharply increased in recent years. Take for example, Russia repeatedly stating its intention to use nuclear weapons against Ukraine. On the other hand, Ukraine has launched several drone attacks on Russia's strategic bombers. Nuclear tensions briefly escalated during the May 2025 military confrontation between India and Pakistan, as Indian missile strikes were rumoured to have targeted one of Pakistan’s nuclear storage facilities in the Kirana Hills. Strategic discussions within the United States have suggested preparing for a limited nuclear war with China, in a future contingency in East Asia. In addition, military attacks on civilian nuclear power plants and facilities have occurred in both Russia-Ukraine and Iran-Israel conflicts, posing serious nuclear security challenges.

In future regional conflicts, if the threshold for using nuclear weapons is lowered, then both nuclear weapons assets and civilian nuclear facilities may become targets of the adversary’s military attack. This not only seriously violates international law, but also poses a huge risk of nuclear escalation and nuclear fallout, with catastrophic

consequences. This is an urgent issue that the international community must work together to address and resolve.

What is even more worrying is that nuclear weapons are gaining greater public acceptance in some parts of the world. Public surveys reveal that the nuclear taboo is not as strong as the taboo against, for instance, the use of chemical weapons. If faced with extreme scenarios of life and death, a significant percentage of survey respondents accept the use of nuclear weapons. Nuclear weapons are also often associated with a country's "strength" and "modernization".

Since the Ukraine crisis, the call for having either indigenous nuclear capabilities or US extended nuclear deterrence has increased in parts of Europe and Asia. The North Korean and the Iranian nuclear issues may be more difficult to resolve now than before the US bombing of Iran's nuclear facilities. The renewed risk of nuclear proliferation further heightens the fears of nuclear conflict.

Nuclear 'No First Use' is the key to nuclear disarmament

After it successfully detonated its first atomic bomb on October 16, 1964, China declared that it would never be the first to use nuclear weapons at any time and under any circumstances, and promised unconditional negative security assurances to non-nuclear weapon states and nuclear-weapon-free zones. China also committed to ultimately achieve the complete prohibition and total disarmament of nuclear weapons. China's longstanding policy of nuclear 'no first use' plays an important role in preventing nuclear war and safeguarding the nuclear taboo. It lowers the significance of nuclear weapons in China's national security policies, effectively reducing strategic risks, and gradually promoting the goal of nuclear disarmament. In 2024, China proposed a 'No-first-use of Nuclear Weapons Initiative' to the five nuclear weapon states. The United Nations Secretary General Guterres has supported the adoption of the no first use policy by all nuclear weapon states. The Association of Southeast Asian Nations, the Association of African States, and many other non-nuclear weapon states have also called on nuclear weapon states to commit to a no first use policy.

On the occasion of 80 years since the atomic bombings of Hiroshima and Nagasaki, we should push for all nuclear weapon states to commit to not being the first to use nuclear weapons against each other at any time and under any circumstances, and to commit to negotiating, as soon as possible, an international convention that prohibits the use or threat of use of nuclear weapons against non-nuclear weapon states and nuclear weapon free zones.

Chapter 4

YOUTH AND THE GENERATION OF GLOBAL HIBAKUSHAS

Monalisa Hazarika

80 years have passed since the atomic bombings of Hiroshima and Nagasaki. 80 years to reckon with the horrors, to learn, to reflect, and to change course. 80 years too long to still be living under the shadow of the bomb – yet here we are. 80 later, and still not enough.

With the global nuclear arms control frameworks deteriorating and disarmament efforts stalled, the world stands at a dangerous crossroads. The Elders have warned about the growing mistrust among nuclear powers, and have called for renewed nuclear dialogue. Their concern is echoed by leading policy experts who caution that the collapse of key treaties, modernisation of arsenals, and the breakdown of diplomatic norms are paving the way for a new, potentially more volatile nuclear arms race. The Doomsday Clock now stands at 89 seconds to midnight, the closest it has ever been, underscoring the existential danger we face. All signs point to the same conclusion—without immediate and sustained action aimed at rebuilding international cooperation, the world edges closer to nuclear catastrophe, threatening not only global security but the very survival of humanity.

The 80-Year-Old Legacy

Hibakusha, or atomic bomb survivors, are living witnesses to the catastrophic human cost of nuclear weapons. Their testimonies carry the weight of the collective memory of radiation sickness, loss of loved ones, and the stigma that followed. Today, they are known for their unwavering resilience and strength, using their lived experience to call for a world free of nuclear weapons.

However, not all victims of the nuclear age have received the same recognition or policy attention. Since 1945, over 2,000 nuclear weapons have been detonated, exposing millions to radioactive fallout across borders and generations. According to historian Robert Jacobs, a nuclear weapon was detonated every 8.6 days between 1946 and 1989, with nuclear weapons exploding on every continent except South America and Antarctica. From the Pacific Islands to Central Asia, entire communities were exposed to radiation, resulting in elevated cancer rates, genetic damage, psychological trauma, and long-term environmental contamination. Millions more have suffered from exposure linked to nuclear weapons production and accidents. These individuals form the broader community of global hibakusha – victims of nuclear harm whose experiences remain largely overlooked in policy discourse.

Global Hibakusha

From Nigeria to the Navajo Nation, from Kazakhstan to Jadugoda in India, the global legacy of nuclear weapons testing, uranium mining, and radioactive waste disposal has created a quiet emergency. In the United States, Downwinders in Utah and Nevada have suffered from elevated cancer rates due to atmospheric testing in the 1950s and '60s. Marshallese residents were displaced from their ancestral lands and atolls, and continue to face intergenerational health effects from the Marshall Islands being used as a US nuclear weapons test site between 1946 and 1958. In Algeria, French nuclear testing in the Sahara brought about radioactive contamination, with the local Tuareg populations continuing to claim birth abnormalities and inexplicable diseases. When the British tested on their lands in the 1950s, Australia's Aboriginal peoples were never made aware of the risks. For decades, tribal populations in India's Jadugoda region have claimed malformations, miscarriages, and poisoned water supplies from uranium mines.

The geographic footprint of nuclear harm is not coincidental; it is colonial. Historically, nuclear weapons have disproportionately affected indigenous and marginalized groups and their territories, depriving residents of political agency, denying sincere consent, and deeming them expendable in the goal of strategic or technological superiority.

Despite their immense suffering, these communities are largely excluded from international nuclear justice frameworks. Most receive little to no compensation, medical care, or environmental remediation. Their suffering has rarely been factored into global nuclear policy, which largely focuses on non-proliferation and deterrence rather than human consequences. This highlights a broader failure of global governance, one that stems from nuclear exceptionalism. By involving affected populations in disarmament discussions, expanding victim assistance initiatives, and holding nuclear powers accountable for past and ongoing harm, the international community can actively address this legacy. Anything less erodes the legitimacy of global security norms and undermines our shared values as global citizens.

Inheriting nuclear anxieties

As a generation, we have inherited a perpetual fear of living in the shadow of nuclear weapons, whereby nuclear threats are diffuse, unpredictable, and disturbingly normalised. We wake up to headlines about states threatening nuclear escalation and recognise that a single detonation might set off a devastating domino effect across regions and alliances. This ongoing backdrop of nuclear insecurity is no longer abstract. It is immediate, lived, and deeply intertwined with colonialism, environmental injustice, and systemic inequality.

Across sectors, young people are actively questioning the historical structures that enabled their development and are amplifying the voices of communities disproportionately impacted by their legacy. We do not view nuclear weapons in isolation, but as part of a broader web of systemic injustices to be addressed through a

multidimensional, intersectional lens. Young academicians are producing interdisciplinary research that links nuclear policy to environmental justice, colonial history, racial inequality, and public health. In civil society and advocacy, we are building coalitions that connect nuclear disarmament with climate action, indigenous rights, and anti-colonial movements. In policy spaces, we are calling for inclusive governance, transparency, and reparative measures.

The question is no longer whether change is needed, but who will act and when.

Chapter 5

NUCLEAR CRISIS ON THE KOREAN PENINSULA: SLEEPWALKING INTO NUCLEAR HELL?

Kim Won-soo

Over the last three decades, the North Korean nuclear problem has dramatically worsened. Often a crisis situation was sparked by North Korea's provocative behaviours and deescalated by a subsequent diplomatic initiative. In-between these crisis-diplomacy cycles, strengthened deterrence and international sanctions took over to counter North Korea's enhanced capabilities.

In this essay, I take a look back at the 2002 nuclear crisis on the Korean Peninsula and draw key lessons, from my own experience as a senior diplomat, for the road ahead toward renewed diplomacy and the denuclearisation of the Korean Peninsula.

The 2002 North Korean Nuclear Crisis

The second of the many nuclear crises on the Korean Peninsula began in earnest with the visit of the United States delegation to North Korea in September 2002. This delegation was led by Jim Kelly, then US Assistant Secretary of State in the George W Bush administration.

The Bush administration suspected North Korea was in possible breach of the 1994 Geneva Agreement by secretive purchases of uranium enrichment devices from black markets. It was aimed at freezing North Korea's plutonium nuclear program in exchange for aid and energy assistance including a construction project of light water nuclear reactors in North Korea.

The Agreement had been implemented relatively well, until these efforts were dealt a serious damaging blow by North Korea's surprising admission, to the visiting US delegation, of its secretive enrichment program. A tit-for-tat chain reaction from the United States and North Korea eventually led to the collapse of the Geneva Agreement.

As a senior diplomat, I was involved in the policy consultations with the United States and other partners. At the time, South Korea failed to impress upon the Bush administration that it would be far better to keep the Agreement alive while pressuring North Korea to give up on the enrichment program on legal grounds, rather than allowing the violator off the legal hook. Unfortunately, eight years of efforts under the Agreement were brought to an abrupt halt. Unsurprisingly, North Korea ratcheted up its provocations through nuclear weapon tests and upgraded missile launches, to become the only country to conduct such tests in the 21st century.

Ironically, the intensifying crisis helped South Korea to persuade the Bush administration to try a new multinational framework differentiated from the bilateral Geneva Agreement. That's how the Six Party Talks were initiated for crisis management and it led to the 2005 Joint Statement.

Three Lessons From the Crisis Experience

First and foremost, through subsequent ups and downs, it became clear to South Korea and the United States – the two main stakeholders – that diplomacy may not be the preferred option but it is the least bad one, in comparison to other options which should be resorted to after diplomacy is exhausted.

Second, South Korea and the United States are likely to have differences in their respective positions vis-à-vis North Korea corresponding to their geopolitical priorities and domestic political contexts. But these differences are not necessarily a negative obstacle and through close coordination, these can be used for a division of labour as sort of a good and a bad cop in negotiating with the North Korean regime.

Finally, as the directly concerned party, South Korea must take the lead in devising any new diplomatic initiative on North Korea. Creative thinking and patient pursuit based on bipartisan domestic support are required to change North Korea's calculation and bring all interested parties on board.

Tasks Ahead for South Korea

Unfortunately, the past diplomatic efforts have not stopped North Korea's nuclear pursuits. To the contrary, North Korean warheads and delivery capabilities have grown exponentially, both in quantity and quality. A fatigue has set into the denuclearisation efforts, which disguises inaction as strategic patience. The Korean Peninsula stands as not only the hardest case of denuclearisation but also as a possible trigger of nuclear confrontation into which the major powers may be inadvertently drawn by misunderstanding or miscommunication.

Moreover, the heightened public frustration has incited greater public support for South Korea's independent nuclear weapon option. If South Korea chooses to go nuclear, it would be catastrophic not only for South Korea's international standing but also for the integrity of the NPT framework, and therefore it must be prevented at all cost.

Status quo is not tenable for South Korea as far as North Korean nuclear and missile capabilities are concerned, especially as time is not on the South Korea's side. Tensions are bound to rise if North Korea crosses another milestone with miniaturising nuclear warheads or acquiring atmospheric reentry technology. Public pressure for South Korea to go nuclear will also rise.

Diplomacy must be reactivated and backed by robust deterrence under the US nuclear umbrella and the threats of sanctions on North Korea. Any new diplomatic initiative must be closely coordinated with the United States with a clear division of roles in consultation with Japan, China, Russia and other partners.

The road ahead for renewed diplomacy is full of challenges and uncertainty, but we cannot afford another failure. South Korea must be creative and proactive in charting a new course, to avoid sleepwalking into nuclear hell.

Chapter 6

80 YEARS AFTER NUCLEAR USE – FOCUSING ON 'NEVER AGAIN'

Sujata Mehta

Global politics, diplomacy, the pursuit of international peace and security, by whichever means, are all processes of challenge and response. Those who are engaged in these disciplines identify the challenges – or more accurately a hierarchy of challenges – as well as the means available at hand to address those challenges, the outcomes they seek, and the problems that may be disregarded or left for later.

One common belief that has been shared by all participants in the international system after the 6th of August 1945 is the conviction that any use of nuclear weapons would be a calamity, and therefore even the threat of such use should be averted. This principle has been unquestioned including by those that maintain nuclear weapons, even while we all recognise that the pace of progress towards the ultimate goal of universal nuclear disarmament has been glacial.

Why do things appear different today?

Here we are in 2025 – 80 years after nuclear use – and we seem to be staring into an abyss which suggests that either we have chosen not to remember the lessons of events – within living memory and not distant centuries ago – or we have wilfully decided to ignore the past and are prepared to be condemned to relive it – in a 'double quick' tempo version.

The use of the atom bombs in August 1945 marked a paradigm shift in history, and as its horrific implications came to be absorbed by people, and not just those who engage professionally with such matters, the nuclear taboo became a universally shared value. In the years that followed, diplomats and others associated with international affairs and nuclear policy, shared the aspiration of giving a concrete shape to the nuclear taboo. This meant averting any circumstance or crisis that might lead to even contemplating the use of nuclear weapons – an indication of the seriousness with which even those countries that possess nuclear weapons, have focused on never needing to use them.

We all know that the bombing of Hiroshima and Nagasaki was preceded by the horrors wrought by the Second World War and the Holocaust. The stench of the attendant death and destruction created a 'never again' sentiment. Even while those who possessed or were driven to acquire the unbottled genie and to devise ways to maintain military nuclear capabilities, the broadest shared consensus was that a nuclear war had to be avoided at all costs. There were instances of nuclear brinksmanship, of dangerous adventurism and of near nuclear misses, and fortunately these were attended by individuals of great courage and sobriety, who did not dilute that general commitment

to ‘never again’. Diplomats who have been associated with these issues have pursued their nations interests – to preserve, and in some cases to limit – their national options, but again with never an intent to push the global order in the direction of war that might unleash nuclear weapons. The last several years, however, have seen a stunning and saddening reversal. The convergence of several crises at this time – active wars; conflicts that have with deliberation placed civilians in the very centre of unceasing and unspeakable violence; a prolonged humanitarian crisis; and the unmistakable impact of climate disasters to name only a few, have brought us to the edge of a precipice. There is a profound disharmony and for those who follow developments relating to peace and security matters this is exacerbated by the almost casual conversation on nuclear deployment in a manner that hadn’t been seen in several preceding decades.

We ought to be able to look to the past to be able to imagine and realise a better future, a more peaceful and more equal future, rather than one in which the possible unleashing of the destructive power of the atom is one among several competing crises. This is the most profound danger that faces us, and yet this is one that is completely within our will and capacity to prevent. We need to heed the message of the Hibakusha who are living testimony to the horrors of nuclear weapons use. At this moment when we are in the midst of a global poly-crisis, our foremost challenge is to maintain focus on the pursuit of universal nuclear disarmament through serious and constructive diplomatic engagement. This is a problem that cannot be postponed. We need to reaffirm in words and in practice our common commitment to never again.

Chapter 7

WIDENING GULF: NUCLEAR DETERRENCE VERSUS NUCLEAR DISARMAMENT

Ristian Atriandi Supriyanto

The non-use of a nuclear weapon in the last eighty years should not delude us into thinking that these weapons are already obsolete. Despite calls for global disarmament, and the more recent international efforts to ban the nuclear weapon, proponents of nuclear deterrence still hold sway – they might even argue that the non-use is prima facie evidence of deterrence success. Eighty years on, the gulf between the disarmament and deterrence camps has, therefore, widened. The growing divide persists even though both sides claim to share the common goal of global stability.

However morally objectionable nuclear weapons may be, the fact remains that they are still here – and are unlikely to disappear anytime soon. The number of nuclear-armed countries has almost doubled since the Cold War, and many are expanding and modernising their arsenals. This is not necessarily because states do not abhor nuclear weapons. Rather, it stems from a chronic trust deficit caused by a multitude of factors, including geopolitics. For the global disarmament agenda to find any credibility among the nuclear-weapon states (NWS), it must first acknowledge and directly address this fundamental lack of trust.

First, disarmament talks cannot resolve legacy geopolitical problems, which have persisted long after – and some even predated – the Cold War. From Europe to the Indo-Pacific, unresolved conflicts in places like Ukraine and Taiwan continue to threaten global stability and carry nuclear risks. Consider the unsettling counterfactual: would Russia have dared to invade Ukraine had the latter kept its nuclear arsenal? While we can never know the answer, the mere possibility would have complicated Russia's strategic and military planning. This is, however, no proof that nuclear weapons would have guaranteed Ukraine's security from a full-scale invasion. Moscow would have invaded anyway, perhaps in a more circumscribed manner. But this uncertainty is precisely the point which gives Ukraine and other vulnerable nations serious pause about the wisdom of disarmament.

By the same token, would a military conflict over Taiwan between the United States and China remain strictly conventional? The stakes are dangerously asymmetric. For Beijing, Taiwan is a core national interest, and its loss would profoundly harm the Chinese Communist Party's (CCP) legitimacy. For Washington, however, the loss would be a foreign policy setback for an administration that can simply be voted out of office. This is not to say Washington would surrender Taiwan without a fight once Beijing invaded and enforced the so-called "reunification". This raises a critical question: how far would China's leaders go to take Taiwan and preserve the CCP's grip

on power? Given the imbalance of political will, assuming such a conflict would not escalate to the nuclear level is a risky proposition.

Second, cascading from the first, nuclear deterrence offers a (false) sense of security from military escalation and aggression. While nuclear weapons have not stopped conventional wars over the last eighty years, some believe their inherent ambiguity helps limit escalation. For example, compare and contrast the recent Iran-Israel conflict with North Korea. Would Israel and the United States have attacked Iran had Tehran, like Pyongyang, left the Non-Proliferation Treaty (NPT) and become an NWS? Would a nuclear-armed Iran have retaliated with atomic weapons? While these hypotheticals are impossible to answer, the contrast presents a stark and unsettling reality: a non-nuclear Iran was attacked for its transgressions, while a nuclear-armed North Korea has not been. This suggests that nuclear weapons do not prevent wars, but they can change the calculus of aggression in unpredictable ways.

Third, declaratory measures by NWS to limit or rule out the use of nuclear weapons suffer from a severe credibility problem. Neither China's 'no-first-use' nor the United States' 'sole-purpose' policies is mutually reassuring, and both are deemed insincere at best. Even NWS participation in nuclear-weapon-free zones (NWFZ) has not engendered complete confidence from all Non-NWS. China's offer to join the Southeast Asian NWFZ, for example, is preconditioned on zonal states recognising its maritime claims in the South China Sea. This linkage partly explains why countries with maritime or territorial boundary disputes with China, such as the Philippines, disregard the offer as a disingenuous tactic rather than a genuine security guarantee.

Fourth, the lines between conventional and nuclear deterrence are blurring, largely due to artificial intelligence (AI) and unmanned systems. AI risks lowering the threshold of nuclear use by delegating critical decisions from human to machines. An AI-enabled early warning system, for instance, could pre-select nuclear retaliation as a default response to an alert, short-circuiting human judgment in a crisis. Furthermore, dual-use technologies like drones could be used to compromise or hunt an opponent's nuclear deterrent, such as their ballistic missile submarines. In the long run, decreasing survivability of nuclear weapons and delivery systems may ironically tempt countries to pour more, not fewer, resources into developing countermeasures.

The widening gulf between the nuclear deterrence and disarmament camps highlights the importance of a broader conversation – one that confronts not only the horror of nuclear weapons but also the inherent perils of deterrence strategy itself. Sadly, the current debate seems like a dialogue of the deaf. The deterrence camp often dismisses abolitionists as naïve, while disarmament activists accuse deterrence advocates of fuelling paranoia and risking Armageddon. The irony is that both sides are motivated by the same goal: preventing nuclear war to maintain global stability. Moving forward, we must escape the rigid "deterrence versus disarmament" framework. The only way to achieve our shared goal of global stability is to bridge this gap, respecting the merits of each argument and forging a more integrated approach to nuclear security.

Chapter 8

80 YEARS SINCE NUCLEAR USE: Q&A WITH SUZUKI TATSUJIRO

Suzuki Tatsujiro

On the occasion of the 80th A-bomb anniversary of Hiroshima and Nagasaki, we asked our senior network member from Japan, Dr. Suzuki Tatsujiro, what past lessons can be examined to find future pathways for a world without nuclear weapons.

What was/were the most challenging experience/s during your career when dealing with the questions about nuclear weapons? Were there moments of despair and how, if at all, were these turned into moments of opportunities for pulling nations back from the brink?

"As a nuclear engineer working mostly on the issue of the nexus between civilian nuclear energy and nuclear weapons, in my understanding the most sensitive issue is the nuclear fuel cycle, and specifically the plutonium issue. In early 2000s, Japan was about to complete the first commercial size reprocessing plant in Rokkasho village, Aomori prefecture. The estimated 40-year lifetime cost of Rokkasho reprocessing plant (800 ton/year) was 14 trillion yen which was much higher than originally expected. I was a senior researcher at the Central Research Institute of Electric Power Industry (CRIEPI), a non-profit think tank sponsored by the utility industry. I wrote several papers to propose a reassessment of the project and to choose spent fuel storage with eventual direct disposal of spent fuel. My argument was that the project was too expensive, and plutonium production should be stopped as it raises serious proliferation and security risks. The paper became very unpopular with the then government and public utilities. I received severe criticism and was even advised not to work on this issue anymore. The paper which I co-authored with my colleague to propose stopping the Rokkasho project was withdrawn by the editor under pressure from the public utility industry. There were other experts, government officials, and industry insiders who were in favour of our opinion. However, there was increasing political pressure against those who opposed the Rokkasho reprocessing plant.

In 2005, the Atomic Energy Commission (AEC) had a year-long discussion about whether to start operating the Rokkasho reprocessing plant . Although economic cost comparison was in favour of direct disposal as compared to the reprocessing option, the AEC decided to maintain its reprocessing policy and Rokkasho reprocessing plant started its test operation in 2015. It was a defeat for those who argue reprocessing is neither beneficial nor necessary for Japan. Non-proliferation and nuclear security concerns were not considered a priority.

I had a similar experience after the Fukushima nuclear accident in 2011. I was appointed as vice-chairman of the AEC and was in charge of reassessment of nuclear fuel cycle policy. In 2012, the AEC reported that a once-through fuel cycle was better than reprocessing option and recommended flexible nuclear fuel cycle policy which allowed direct disposal. However, that policy was finally opposed by the proponents of fuel cycle and again the nuclear fuel cycle policy was maintained.

My fight against plutonium continues, but those were my most despairing moments when I felt I failed to save Japan from plutonium surplus and economic disaster."

What, in your understanding, have been the most practical steps taken so far to promote the agenda of nuclear disarmament and how can they been taken ahead?

"The most important issue at present is to mitigate the risk of nuclear weapons use. There have been many proposals for risk reduction of nuclear weapons use and promoting the goal of nuclear disarmament. Four efforts, however, are particularly significant in the context of promoting nuclear risk reduction and disarmament.

First is the Dialogue for Risk Reduction. One possible practical step is to initiate a dialogue among nuclear weapon states on the at least three risk reduction measures (as an example): Not to attack nuclear weapon systems with cyber and/or anti-satellite weapons; Not to apply AI to nuclear weapon systems (human involvement in decision making is essential); and Establish Hot Line communication for crisis management.

Second would be the discussion on No-First-Use policy. Only China and India have an explicit No-First-Use policy. But the United States and its allies do not consider an NFU policy to be credible. Nonetheless, two former US administrations (under Obama and Biden) had proposed to introduce "Sole Purpose" policy which is almost identical to NFU policy. So, it would be useful to discuss the risks and benefits of NFU policy between all five Nuclear Weapon States as well as the nuclear umbrella states and nuclear-armed states outside the NPT.

Third key step is not to develop or deploy an Intermediate Range Nuclear Missile (Force). An intermediate range nuclear missile (tactical nuclear weapon) is likely to be used as a first strike weapon. So, the development and deployment of the Intermediate Nuclear Force (INF) increases the risk of first strike during a conflict escalation. It is therefore imperative to discuss possible non-deployment of INF in the particular region.

Fourth significant measure which needs to be reemphasized is the 'Negative Security Assurance' (NSA). For non-nuclear weapon states, the NSA is an essential security guarantee against nuclear attack from a nuclear armed states. This non-conditional commitment from nuclear-armed states is one of the cornerstones of the NPT and the Nuclear-Weapon-Free Zone Treaties."

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ABOUT APLN

The Asia-Pacific Leadership Network (APLN) is an independent, not-for-profit organisation and network of over 170 former, serving and emerging political, military, diplomatic and academic leaders from 23 countries across the Asia-Pacific, registered and headquartered in Seoul, South Korea. APLN's work addresses regional defence and security challenges with a particular focus on reducing nuclear weapons risks.

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